Response to “On Seed Transmissibility of Soybean vein necrosis-associated virus in Symptomless Soybean Seedlings”

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A public comment was posted on the PLoS ONE website on 18 March 2016 addressing some of the concerns raised by the authors of Hajimorad et al. (2015a). The full comment can be viewed here:

<http://journals.plos.org/plosone/article/comment?id=info%3Adoi%2F10.1371%2Fannotation%2Febbb17c1-a809-4c83-ab71-e7830b6fb7ac>. We will re-summarize portions of that response here.

Concern was raised that we failed to cite the publication Hajimorad et al. (2015b). Failure to cite this publication was linked to the fact that our manuscript was submitted for review one day prior to publication of the *Journal of Plant Pathology and Microbiology* (JPPM) article.

Since we are now familiar with this paper we will address it here. *Soybean vein necrosis virus* (SVNV) is an extremely difficult virus to work with. It is also extremely hard to detect without the most sensitive techniques. We have found that the sensitivity of the accepted ELISA technique is relatively low compared to that of PCR and RNAseq technology. Results of previous tests support this finding (Smith et al. 2013). Therefore, the conclusion that Hajimorad et al. (2015b) offer in the JPPM is perfectly acceptable based on the tools used and the results obtained. Our PLoS One paper (Groves et al. 2016) utilized extremely sensitive PCR and RNAseq techniques to build upon the limited knowledge available about SVNV, and *we believe this was crucial to our discovery of seed transmission*.

As for concerns about our interpretation of results in Hajimorad et al. (2015a), we believe that our comments are acceptable and within the realms of the scientific method and scientific writing. The discussion we put forth in our paper is quoted here for clarity: “In a recent paper by Hajimorad et al. (2015a), they identified soybean plants with SVNV grown in a greenhouse. The SVNV-positive plants were grown from seed collected from the field. The authors postulate that the presence of SVNV in greenhouse grown plants was likely a result of feeding by overwintering, viruliferous adult thrips. However, three soybean varieties were grown in the same greenhouse and only two of the varieties were infected with SVNV. If viruliferous thrips were the

source of SVNV inoculum, it would be presumed that all three varieties would have been infected, as genetic resistance toward SVNV is not known. In addition, distribution of viral symptoms should have been fairly uniform in this environment, if thrips were the source of inoculum. Based on the results of our study, we hypothesize an alternative explanation that the SVNV-infected greenhouse plants described by Hajimorad et al. likely could have arisen from seed-borne SVNV transmission.” In the recent letter to the editor, Hajimorad presents a lengthy rebuttal to our point that their results *could have arisen* from seed-borne transmission and conclude that “Collectively, these observations suggest that it is *highly unlikely* that the alternative hypothesis proposed by Groves et al. (2016) would survive the test.” The apparent difference in interpretation lies in the nuance arising between *could have arisen* and *highly unlikely to have happened*. We agree that no firm conclusion can be made and believe our original suggestion that seed-transmission was possible is reasonable. Indeed, our discussion does not change the observations or results of either paper. It also does not call any of the research into question. We simply offer an alternative hypothesis for the readers to consider that can be tested and *should be considered in subsequent experiments*.

LITERATURE CITED

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See also:

Hajimorad, M. R. 2016. On seed transmissibility of *Soybean vein necrosis-associated virus* in symptomless soybean seedlings. *Plant Health Prog.* <http://dx.doi.org/10.1094/PHP-LT-16-0801>

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